

LOCKING FUEL TANK COVER

BACKGROUND

[01] The present invention relates to a lockable cover for a fuel tank.

[02] Certain plastic fuel tanks have a plastic fill tube. Metal funnels are crimped on to the end of the fill tubes for receiving lockable fuel caps. However, different fuel tanks require different funnels, and one lockable fuel cap may not work with the funnel of a different fuel tank. It is desired to have a lockable fuel tank cover which can be field installed and which can function with a variety of different fuel tanks and funnels.

[03] A cap locking mechanism was known for use on John Deere 7000 tractors. To use this locking mechanism, the fuel cap was removed, a ring with a long lever arm was mounted over the fill neck, and the fuel cap was replaced. Then a clamping ring was mounted on the fuel cap and locked to the locking ring. The long lever arm would engage the fuel tank and prevent rotation and removal of the fuel cap. However, this previous design is prone to moving around and making noise in response to vibration of the tractor.

SUMMARY

[04] Accordingly, an object of this invention is to provide a lockable fuel tank cover which can be field installed and which can function with a variety of different fuel tanks and funnels.

[05] This and other objects are achieved by the present invention, wherein a fuel tank cover assembly is provided for a fuel tank having a fill tube projecting therefrom and a fuel cap for covering an open end of the fill tube. The cover assembly includes a mounting member mounted on and secured to an end of the fill tube. A cover member is releasably attachable to the mounting member. The cover member can be pivoted to a locking position wherein the housing prevents access to the fuel cap and wherein it can be secured to the mounting member by a lock, such as a padlock. A funnel member is fixed to the open end of the filler tube, and the mounting member is attached to an exterior surface of the funnel.

BRIEF DESCRIPTION OF THE DRAWINGS

[06] Fig. 1 is a perspective view a lockable fuel tank cover assembly according to the present invention;

[07] Fig. 2 is a perspective view of a fuel tank fill tube of the present invention;

- [08] Fig. 3 is a perspective view of a funnel member of the present invention;
- [09] Fig. 4 is a perspective view showing the funnel member of Fig. 3 mounted on the fill tube of Fig. 2;
- [010] Fig. 5 is a perspective view of mounting member of the present invention; and
- [011] Fig. 6 is a perspective view of the cover member of Fig. 1.

DETAILED DESCRIPTION

[012] Referring to Fig. 1, a fuel tank 10 has a hollow cylindrical fill tube 12 projecting therefrom. A conventional sheet metal funnel 14 is crimped onto the open end of tube 12. A conventional fuel cap 16 is screwed or cammed into the funnel 14 to cover the open end of the fill tube 12. A cover assembly 20 includes a mounting member 22 and a cover member 24. Mounting member 22 is mounted on and receives an end of the fill tube 12. Cover member 24 is releasably attachable to the mounting member 22.

[013] Referring now to Fig. 2, the fill tube 12 has a plurality of evenly spaced apart recesses 11 formed therein and a pair of alignment ridges 13. Preferably there are 6 recesses 11, but only 2 are fully visible in Fig. 2. Referring now to Figs. 3 and 4, funnel 14 has a plurality of spaced apart mounting fingers 15 formed therein for alignment with and resilient receipt by the recesses 11. Funnel 14 also has a pair of grooves 17 for receiving the alignment ridges 13.

[014] Referring now to Fig. 5, the mounting member 22 has a hollow annular ring-shaped body 26. A plurality of spaced apart tabs 28, 30, 32, 34, 36 and 38 projecting axially from a radially inner portion of the body 26. Mounting member 22 also includes a first stub 40 projecting generally radially outwardly from a side of the body 26, and a second stub 42 projecting generally radially outwardly from an opposite side of the body 26. Stub 40 has an elongated aperture or slot 46 formed therein. Stub 42 has upwardly projecting flange 43 with an opening 48 extending therethrough. Each of tabs 28, 30 and 32 has a projection 50 which projects radially inwardly. Each of tabs 34, 36 and 38 has a threaded bore 52 projecting radially therethrough.

[015] Referring now to Figs. 1 and 6, cover member 24 includes a closed housing 54 and a base or rim 56. A first tab 58 projects radially outwardly from rim 56 for pivotal insertion into slot 46. A second tab 60 projects radially outwardly from rim 56 opposite from tab 58. An elongated slot 62 extends through tab 60. Stub 58 can be removed from slot 46 and the cover 24 can be moved away from cap 16 and mounting member 22.

[016] As best seen in Fig 1, mounting member 22 is held in place on the funnel 14 by screws or bolts 70. Preferably, weld nuts 72 are welded to tabs 34-38 and the bolts 70 are screwed into the weld nuts 72 until they tightly engage the corresponding recesses 11 and thereby hold mounting member 22 in place on the funnel 14. Alternatively, spring nuts (not shown) could be used to retain the screws 70 in place. The cover member 24 may be pivoted clockwise (viewing Fig. 1) until slot 62 receives flange 43. In this position the cover 24 covers and prevents access to cap 16, and a conventional lock can be inserted through opening 48 to secure the cover 24 in this position.

[017] While the present invention has been described in conjunction with a specific embodiment, it is understood that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, this invention is intended to embrace all such alternatives, modifications and variations which fall within the spirit and scope of the appended claims.